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REMARKS

Reconsideration and further examination is respectfully requested. Claims 1-6 are pending in this application.

Objections to the Drawings

Figure 1 was objected to for failing to include the legend 'Prior Art.' Applicants submit a new Figure 1, attached hereto, which has been modified to include the legend 'Prior Art.' Accordingly, it is submit that the objection has been overcome.

Objections to the Specification

The Abstract of the Disclosure was objected to for undue length. Applicants have amended the Abstract of the Disclosure to conform to the current rules. Accordingly, it is submitted that the objection has been overcome and should be withdrawn.

The disclosure was also objected to for misidentification of element 150 as a laser rather than a filter. Applicants have amended the specification to correct this error. The Examiner is thanked for the careful review of the specification.

Objections to the Claims

The claims were objected to for various informalities. Applicants have amended the claims to remove the informalities, and it is therefore requested that the rejection be withdrawn.

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Claim Rejections under 35 U.S.C. §103

Claims 1-2 and 5 were rejected under 35 U.S.C. §103(a) as being unpatentable over Albanese et al (U.S. Patent No. 4,712,859) in view of Wright et al (U.S. Patent No. 6,411,410).

Albanese

Albanese describes a distributed star network for providing point-to-point and broadcast-type communication among a plurality of user stations (Abstract). Albanese's network is described at column 2 lines 60-65 as:

"...Each of the user stations 103-1,103-2, ... 103-N includes an external modulator 115-1,115-2,115-N. The modulators 115-1,115-2, ... 115-N are used to modulate information onto radiation transmitted over fibers 105-1,105-2,105-N. The radiation is then transmitted back to the central office 101 by means of fibers 107-1,107-2, ... 107-N. Note as shown in FIG. 1, that each of the fibers 107-1,107-2, ... 107-N is associated with one of the user stations 103-1,103-2, ... 103-N, respectively..."

Applicants note that Albanese makes specific and frequent reference to the use of single mode fiber in their invention, which is known in the art as being capable of only forwarding a single light wave at a time.

Wright

Wright describes, in the Abstract, an optical line termination (OLT) device (12) that generates a plurality of optical signals having different respective wavelengths ( $\lambda_1$ ,  $\lambda_2$ ). Each optical signal carries data, and wavelength-division-multiplexes the optical signals. A plurality of optical network units (ONUs 14.sub.1 -14.sub.5) are connected to the OLT device (12) by way of a passive optical network (6) so as to receive the wavelength-division-multiplexed optical signals. Each ONU (14) has a wavelength selection unit operable in dependence upon control information sent from the OLT (12) to the ONU (14) concerned by way

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of the passive optical network (6) to select one of the optical signals of the plurality, and also has a detector for processing the selected optical signal to derive therefrom the data carried thereby. The control information may be included in the data-carrying optical signals themselves as overhead information, or may be sent separately by another optical signal that is wavelength-division multiplexed with the data-carrying optical signals. Such an arrangement enables the downstream capacity of the passive optical network to be shared flexibly by the different optical receivers.

Thus Wright effectively discloses only a number of receivers coupled to a WDM signal, with logic for extracting their data from the WDM cable. It is noted that by definition Wright must use multimode fiber, which is capable of simultaneously carrying multiple light waves on the fiber.

The MPEP §2143 describes the *prima facie* requirements for obviousness. "To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations..."

1. No motivation for modifying the references as suggested by the Examiner

The Examiner states, on page 4 of the Office Action, that "...Albancse does not expressly disclose: said filter being tunable. However, tunable filters are extremely well known and common in the art. Write et al. discloses downstream stations that

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incorporate tunable filters (Write et al., tunable filter 42 in Fig. 7). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the downstream stations of Albanese et al. to incorporate tunable filters. One of ordinary skill in the art would have been motivated to do this to enable the downstream stations of Albanese et al. to handle different wavelengths, enabling the benefits of wavelength-division multiplexing (Wright et al., col. 1, lines 60-67), such as increased capacity and increased bandwidth efficiency..."

Applicants disagree that the motivation is present to support this modification. Applicants particularly note that Albanese specifically states that "The distributed star network is implemented using single mode optical technology..." Accordingly, Applicants disagree that a motivation exists to modify Albanese as suggested by the Examiner to support WDM technology. It is well known that "If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959)." Applicants submit that the proposed modification of Albanese from a single mode to a multimode system is not supported by the teachings of the art. Accordingly for at least the reason that there is no motivation for modifying the references as suggested by the Examiner, the rejection is improper and should be withdrawn.

2. Combination neither describes nor suggests the claimed invention

Claims 1-5:

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Applicants note that the elements of the claims, as amended, are neither shown nor suggested in the art proffered by the Examiner. For example, claim 1 recites "...A fiber-optic system comprising ... a central office; and at least one downstream station connected to said central office by a fiber ... said central office comprising a TX unit and a CW laser; and each said downstream station comprising an RX unit and a tunable filter, said tunable filter being placed between the downstream station's RX unit and said central office *to selectively reflect a signal received from the CW laser on the bi-directional fiber back to the central office on the bi-directional fiber...*"

Applicants note that Albanese describes a system wherein separate fibers are used for communicating upstream with the central station. In addition, no such structure is shown in Wright. Accordingly, for at least the reason that the combination of references fails to teach or describe the limitations of the claimed invention, the rejection is overcome and should be withdrawn.

Claims 2-4 serve to add further patentable limitations to claim 1, but are allowable for at least the reasons put forth with regard to claim 1.

Claim 5, as amended, now recites "...A fiber-optic system comprising ... each said downstream station comprising means for receiving a light signal and a tunable filter, said tunable filter being placed between the downstream station's means for receiving a light signal and said central office, *the tunable filter for selectively reflecting a signal received from the central office on the bi-directional fiber back to the central office on the bi-directional fiber....*"

As described with regard to claim 1, no such structure is shown in the combination of references

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cited by the Examiner. Accordingly, for at least this reason the rejection is overcome and should be withdrawn.

**Claim 4:**

Claim 4 was rejected under 35 U.S.C. §103(a) as being unpatentable over Albanese in view of Wright and further in view of Ramaswami. The Examiner relies on Ramaswami as teaching the limitation of a tunable laser. However, as described with regard to claim 1, Albanese is particularly intended for use in a single mode fiber optic system. Accordingly, no motivation can be found for modifying Albanese to use a tunable laser. In addition, even if a motivation could be found, Ramaswami fails to overcome the inadequacies described with regard to the Albanese and Wright combination. For at least this reason, claim 4 is patentably distinct over the combination of references, and the rejection should be withdrawn.

**Claims 3 and 6:**

Claims 3 and 6 were rejected under 35 U.S.C. §103 as being unpatentable over Albanese in view of Wright and further in view of de Corlieu U.S. Patent No. 4,134,008. The Examiner relies on de Corlieu as teaching the limitation of claim 3, in particular "...with said tunable filter being selectively tuned so as to modulate the light being reflected back to the central office, whereby to effectively create an upstream data transmission from the downstream station to the central office...." As described above, Applicants can find no support for limitation of the parent claims in Wright or Albanese, and de Corlieu similarly fails to teach or describe the elements of the invention. For at least these reasons, claims 3 and 6 are patentably distinct over the combination of references, and the rejection should be withdrawn.

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Applicants have made a diligent effort to place the claims in condition for allowance. However, should there remain unresolved issues that require adverse action, it is respectfully requested that the Examiner telephone Lindsay G. McGuinness, Applicants' Attorney at 978-264-6664 so that such issues may be resolved as expeditiously as possible.

For these reasons, and in view of the above amendments, this application is now considered to be in condition for allowance and such action is earnestly solicited.

Respectfully Submitted,

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